ORIGINAL
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R-585-4-4-9
PRELIMINARY ASSESSMENT OF
ALLIED CORPORATION - FRONT ROYAL PLANT
PREPARED UNDER

TDD NO. F3-8312-16
EPA NO. VA-34
CONTRACT NO. 68-01-6699

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JUNE 27, 1984

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
(b) (4) [redacted]	(b) (4) [redacted]	(b) (4) [redacted]
GEOLOGIST	ASST. MANAGER, REPORTS	MANAGER, FIT III

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SECTION 1

1.0 INTRODUCTION

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1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-6699. This specific report was prepared in accordance with Technical Directive Document No. F3-8312-16 for Allied Corporation's Front Royal Plant located in Front Royal, Virginia.

1.2 Scope of Work

NUS FIT III was tasked to perform a preliminary assessment of Allied Corporation's Front Royal Plant. The inspection was to include examination of the company's past waste disposal areas and a holding pond, which is currently in use.

1.3 Summary

The Allied facility is an active plant engaged in the manufacture of sulfuric acid. There are 2 landfill areas on site where process-related wastes were buried, plus a waste water holding pond. Materials reportedly buried on site, according to company officials, included sulfuric acid catalyst (which contains vanadium pentoxide), steel wool and ceramic chips that had been in contact with acid mist, and insulation material, probably containing asbestos.

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SECTION 2

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2.0 THE SITE

2.1 Location

The site is located in the town of Front Royal, Warren County, Virginia. Allied's property is bordered on the west by the South Fork of the Shenandoah River. An unnamed tributary runs along the site's southern boundary and separates Allied's property from the Avtex Company, a rayon manufacturing concern. A residential neighborhood is located northeast of the site.

2.2 Site Layout

The Front Royal site covers a total of 83 acres, approximately 10 of which are fenced and contain the process area and buildings. This area, which is on the eastern edge of the site, is surrounded by a ditch that traps surface runoff and channels it into a containment pond.

There are 3 areas of concern at the site: the containment pond (waste area no. 1), and 2 landfill areas (waste area nos. 2 and 3). All 3 are located near the southern border of the property, close to a small stream.

The containment pond is located immediately adjacent to the stream. It is unlined and varies in depth from 1 to 3 feet, depending on the amount of sediment accumulated on the bottom. It is approximately 80 feet in diameter. A smaller pond, located next to the containment pond, is inactive and swampy. Nearby is a large earthen berm formed from the sediments dredged out of the holding pond. A series of limestone filter beds, where incoming water is monitored, are adjacent to the pond. The pond discharges to the stream via an NPDES outfall.

The 2 landfilled areas are located above the holding pond. Each measures approximately 50 feet by 100 feet and are reportedly 10 feet deep. Waste area no. 2 is divided into 2 parts by a dirt path; one part is situated on top of the concrete foundation of an old farm house. Waste area no. 3 is topographically below area no. 2 and overlooks the stream.

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2.3 Ownership History

Allied Corporation (formerly the Allied Chemical Corporation) purchased the property around 1944 and is the current owner. Prior to this time, the land was part of a small family-run farm.

2.4 Site Use History

The containment pond was installed in 1974 and has been used continuously since that time. It serves as a holding area where the temperature and pH of non-contact cooling water plus surface runoff are adjusted before the water is discharged at the NPDES outfall point.

The 2 landfilled areas were shallow excavations where process-generated wastes were buried. Waste area no. 2 was used from 1946 through approximately 1979. (See Section 4.0 for a discussion of waste types.) The area is now used for storage of miscellaneous materials including construction rubble and old equipment. Waste area no. 3 was used from about 1946 through 1975 or 1976. It is now overgrown with grass and weeds.

2.5 Permit and Regulatory Action History

The Front Royal plant operates under NPDES Permit No. VA0002399. Under the stipulations of this permit, the temperature of the effluent must be less than 90^{o}F, and the pH must be in the 6.0 to 9.0 range before discharge.

Allied submitted an application to EPA for a RCRA permit around 1981; however, after modifying their manufacturing process in such a way that RCRA regulations no longer applied, they withdrew their application.

2.6 Remedial Action To Date

No remedial action has been performed at this site.

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SECTION 3

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3.0 ENVIRONMENTAL SETTING

3.1 Surface Waters

Surface runoff from the processing area on site is collected in a ditch and diverted to the containment pond. There, if necessary, the water is neutralized with lime and allowed to cool before it is discharged into the unnamed tributary of the South Fork of the Shenandoah River. The NPDES discharge point on the tributary is roughly 1,500 feet upstream of the river.

Surface runoff from the remainder of the site, including the landfill areas, is only partially trapped by the collection ditch. Waste area no. 3 and the dredgings berm are topographically below the ditch; therefore, runoff from these areas would enter the stream.

Flood potential on site is high, as the western half of the site is within the 100 year flood prone area. However, the processing and waste disposal areas do not fall within the mapped flood prone zone.

The South Fork of the Shenandoah River is used for recreational and industrial purposes. The cooling water used at the Front Royal facility is obtained from the river.

3.2 Geology and Soils

Front Royal falls within the Appalachian Valley and Ridge Physiographic province. The state geologic map shows that the site area is underlain by Ordovician age carbonate rocks, composed primarily of limestone, with interbedded shales and sandstones. An Allied representative indicated that shale bedrock was found on site at a depth of approximately 2 feet during excavation for the containment pond.

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Overlying the bedrock is a layer of alluvial overburden consisting of gravel, sand, silt, and clay. Soils developed in the alluvium are members of the Chagrin association which consists of deep, well-drained soils formed on floodplains. On-site observations by FIT III indicated that this soil was a red-brown clay loam. According to the Soil Conservation Service, the other soil type found on site is the B & C Dyke loam, a deep colluvial soil formed from greenstone (altered igneous rock). Depth to bedrock under the Dyke loam is reportedly greater than 5 feet.

3.3 Groundwaters

In this region, fair to good yields are reported for wells drilled in carbonate rocks, and good to excellent yields in areas where the carbonate rocks are overlain by alluvial materials. Groundwater in the vicinity of the site is not currently used.

Depth to groundwater on site is not known, but is suspected to be shallow due to the proximity of the stream. Flow within the shallow water table aquifer is expected to be westward, towards the South Fork of the Shenandoah River.

There is one abandoned well on the Front Royal site, which is located near disposal area no. 2. It is the old home well from the farm house originally located there. According to an earlier EPA/SWCB inspection, the well is silted-in and has reportedly been contaminated with human waste.

Due to the contamination detected in home wells on the western side of the river, Avtex, the neighboring facility, commissioned a detailed groundwater study by Geraghty and Miller, consultants. It was concluded that, locally, groundwater conditions are highly erratic, due to the fractured nature of the shale bedrock in the area.

3.4 Climate and Meteorology

The average annual temperature in the Front Royal area is between 54^{o} and $59^{o}F$. Total precipitation normally averages 44 inches per year, and the average annual evaporation rate is 30 inches per year.

3.5 Land Use

The site is located in an area that is primarily industrial. The Avtex Company, a large rayon manufacturer, is located across the stream and due south of Allied's Front Royal Plant. The area northeast of the site is residential.

3.6 Population Distribution

The estimated population within a 1/2-mile radius of the site is approximately 265 people. This population includes about half of the homes in the residential area northeast of the site.

3.7 Water Supply

Water for the homes in Front Royal, as well as for the Allied facility, is supplied by the town's public supply. The municipal authority obtains this water from the (b) (9) [redacted] There are 2 intake points located in the vicinity of Happy Creek, which is roughly (b) (9) [redacted] of the site.

3.8 Critical Environments

There are no known critical habitats of endangered species in the immediate area of the site. The Shenandoah River, from the Warren County/Clarke County line and throughout Clarke County, immediately downstream of the site, has been designated as a Scenic River.

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SECTION 4

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4.0 WASTE TYPES AND QUANTITIES

All the waste materials disposed of at Allied's Front Royal facility were generated on site by their production process. According to company representatives interviewed by FIT III, no additional wastes from outside sources were accepted at the site.

Based on the Allied Corporation's notification to EPA (see Appendix C, 1.2), materials used in the production of sulfuric acid at the Front Royal Plant include: sodium chloride, sodium carbonate, limestone, elemental sulfur, vanadium pentoxide, caustic soda, fuel oil and gasoline. In addition, small quantities of the corrosion products of lead, chromium and nickel may be present from the processing equipment. No organic chemicals are used in the manufacturing process. Small amounts of organic chemicals may be used on site for degreasing or as weed killers.

Under current disposal practices, all waste materials are shipped off site, either for disposal in approved landfills or for recycling.

Waste Area No. 1 - Containment Pond

This holding pond is used to adjust the pH and temperature of non-contact cooling water (27 gpm) plus surface runoff (variable quantity) before it is discharged at the NPDES regulated outfall. The surface runoff originating from the process area may contain trace concentrations of past products, supplies and raw materials. Surface runoff originating from the landfill areas could contain the waste materials cited below, and those materials currently stored at the surface (see Section 5.3 - Site Observations). Normal average discharge from the NPDES outfall is 50 gpm or less.

Sediments from the bottom of the containment pond are periodically dredged. These sediments have been piled nearby, forming a large earthen berm.

A priority pollutant analysis, performed by Allied in 1980, comparing water quality of the pond effluent with the influent cooling water from the river, shows that the discharged water is slightly enriched in chromium, copper, nickel, silver, and zinc (see Appendix C, 1.2). Tests for vanadium, a constituent of the sulfuric acid catalyst, were not performed.

Waste Area No. 2 - Landfill

Materials buried here include:

- Spent vanadium pentoxide (VO_5), the sulfuric acid catalyst, a mixture of diatomaceous earth, resin and binders containing 6 to 7 percent by weight VO_5, plus trace quantities of other metallic ions such as sodium and potassium. Total quantity of catalyst is approximately 126,800 pounds (of which approximately 2,500 pounds is V).

- Steel wool, used in acid mist elimination in the air drying tower. This material may contain trace levels of sulfuric acid. The material was buried loose; the total quantity is unknown.

A composite soil sample from waste area no. 2, taken in 1982 by EPA in conjunction with Virginia's Water Control Board, showed the presence of sulfur (10,000 mg/kg), chromium, nickel, and lead, plus low levels of PNAs (see Appendix C, 1.1).

Waste Area No. 3 - Landfill

Materials buried here include:

- Insulation materials, probably containing asbestos. This material was not packed into drums, but was buried loose. A total of approximately 20 tons of insulation was disposed of, of which 5 to 10 percent (or 1 to 2 tons) may have been asbestos.

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- Ceramic packing material: fired clay which was in contact with sulfuric acid in the air drying and absorbtion towers. This material was generally washed and neutralized before handling. The total waste quantity is unknown.

- Small quantities of the VO_5 sulfuric acid catalyst, as in area no. 2, may also have been buried here.

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SECTION 5

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5.0 FIELD TRIP REPORT

5.1 Summary

On Tuesday, February 24, 1984, NUS FIT III members Loren Lasky and James Strickland conducted a preliminary assessment at Allied's Front Royal Plant. The team interviewed the plant manager and then toured the waste disposal areas. The temperature on the day of the site visit was approximately 45°F and sunny.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Robert Ford
Plant Manager
Allied Corporation
P.O. Box 883
Front Royal, VA 22630
703-635-3121

Anthony Pane
U.S. Soil Conservation Service
101 South Court Street
Luray, VA 22835
703-743-5581

Robert Wichser
Bureau of Solid Waste Management
State Department of Health
109 Governor Street
Richmond, VA 23219
804-225-2835

Joseph Fromal
Mack Sterrett
State Water Control Board
2111 N. Hamilton Street
Richmond, VA 23230
703-828-2595

Walter Duncan
Town Manager
P.O. Box 1560
Front Royal, VA 22630
703-635-3111

5.2.2 At The Site

Robert Ford
Plant Manager
Allied Corporation
P.O. Box 883
Front Royal, VA 22630
703-635-3121

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5.3 Site Observations

- Waste disposal area #2 was covered with a mixture of fill and railroad ballast (gravel and crushed rock).

- Materials scattered around the surface of area no. 2 included steel wool, concrete rubble, white powder (soda ash), yellow powder (elemental sulfur) and fiber glass insulation.

- Several barrels observed at area no. 2 were identified as old, empty barrels retained for waste containment in the event of a leak.

- In the section of waste area no. 2, which was situated on top of the farmhouse foundation, part of a cement wall was still in place. Also in this part of area no. 2 were piles of white and black sand used for sandblasting, and a large, brick-lined lead tank which had been saved for possible later use.

- Waste area no. 3 was completely over grown with grass and weeds. Scattered about the surface were many small, cylinder-shaped pieces of ceramic.

- Material in the berm formed from pond dredgings included reddish brown dirt, cement blocks, wood and debris.

- The containment pond area was fenced in. Water in the pond was turbid and brown.

- Piles of white powder, the lime used to neutralize low pH water, were stored around the edge of the pond. Some lime also formed a barrier between the pond and the now inactive and stagnant smaller pond behind it.

- Water in the unnamed tributary was clear and flow was low. The stream is about 1 foot wide and less than 1 foot deep in the area where the NPDES discharge point is located.

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- No HNU or radiation readings above background were detected anywhere on the site.

- Large mountains of white fibrous material were located on the Avtex property, just south of Allied's property and roughly 150 feet from the stream. A chemical smell was noted whenever the wind blew in from this area.

Site Name: Allied - Front Royal
TDD No.: F3-8312-16

5.5 Photographic Log

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5.6 EPA Assessment Form

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5.4 PHOTOGRAPHIC LOG

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Photo 1 - Disposal area no. 2.

Photo 2 - Disposal area no. 2, lead tank (Allied plant in background).

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Allied Ironr Royal
F3-8312-16
VA-34

#1 Disposal area #2

2/24/84
1415

LorenRLasley
Loren Lasley
NUS FIT III

Allied Ironr Royal
F3-8312-24
VA-34

#2 Disposal area #2
Lead Tank
(Allied Plant in background)

2/24/84
1430

LorenRLasley
Loren Lasley
NUS FIT II

Photo 3 - Disposal area no. 3 over grown.

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Photo 4 - View from disposal area no. 2, down towards containment pond (ditch in foreground, Avtex plant in background).

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Allied Iron Royal
F3-8312-16
VA-34

#3 Disposal area #3 overgrown

2/24/84
1445

(b) (4)

NUS FIT III

Allied Iron Royal
F3-8312-16
VA-34

#4 View from disposal area #2 down towards containment pond (Clutch in foreground, Autex in background)

2/24/85
1435

(b) (4)

NUS FIT III

Photo 5 - Waste area no. 1 containment pond.

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Photo 6 - Inactive pond in foreground, waste area no. 2 in background, behind wall.

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Allied Front Royal
F3-8312-16
VA-34

#5 Waste area #1
containment pond

2/24/84
1455

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Allied Front Royal
F3-8312-16
VA-34

#6 Waste disposal area #2 in background behind wall.
Inactive pond in foreground.

2/24/84
1455

NUS FIT III

F3-8312-16

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION	SITE NUMBER (To be assigned by Hq)
III	VA-34

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II *(Preliminary Assessment)*. File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force *(EN-335)*; 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

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A. SITE NAME: Allied Corp. Front Royal Works

B. STREET *(or other identifier)*: Kendrick Lane (P.O. Box 883)

C. CITY: Front Royal

D. STATE: VA

E. ZIP CODE: 22630

F. COUNTY NAME: Warren

G. OWNER/OPERATOR *(If known)*

1. NAME: Allied Corp.

2. TELEPHONE NUMBER: 703-635-3121

H. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

Sulfuric acid manufacturing facility.

J. HOW IDENTIFIED *(i.e., citizen's complaints, OSHA citations, etc.)*: Echkardt Notification

K. DATE IDENTIFIED *(mo., day, & yr.)*: 11/79

L. PRINCIPAL STATE CONTACT

1. NAME: Robert Wichser, State Department of Health (804-225-2835)
Joe Fromal, State Water Control Board (703-828-2595)

2. TELEPHONE NUMBER:

II. PRELIMINARY ASSESSMENT *(complete this section last)*

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☒ 3. LOW ☐ 4 NONE ☐ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED *(no hazard)*

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☐ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☒ 4. SITE INSPECTION NEEDED *(low priority)*

C. PREPARER INFORMATION

1. NAME: (b) (4), NUS FIT III

2. TELEPHONE NUMBER: 215-687-9510

3. DATE *(mo., day, & yr.)*: April 9, 1984

III. SITE INFORMATION

A. SITE STATUS

☒ 1. ACTIVE *(Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)*

☐ 2. INACTIVE *(Those sites which no longer receive wastes.)*

☐ 3. OTHER *(specify)*: _____ *(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)*

B. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES *(specify generator's four-digit SIC Code)*: 2819

C. AREA OF SITE *(In acres)*: 83 acres

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE *(deg.-min.-sec.)*: 38° 55' 53"N

2. LONGITUDE *(deg.-min.-sec.)*: 78° 12' 50"W

E. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO ☒ 2. YES *(specify)*: Processing facilities

Continue On Reverse

Continued From Front

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
			X 1. LANDFILL
			2. LANDFARM
			3. OPEN DUMP
			4. SURFACE IMPOUNDMENT
X 5. PIPELINE	5. TANK, BELOW GROUND	X 5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

Two landfill areas on site contain buried wastes. A containment pond, still in use, for the neutralization of waste water.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1 UNKNOWN ☐ 2. LIQUID ☒ 3. SOLID ☐ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☒ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5 HIGHLY VOLATILE
☒ 6. TOXIC ☐ 7 REACTIVE ☒ 8. INERT ☐ 9. FLAMMABLE

☐ 10. OTHER (specify): _____

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Company estimates based on production quantities.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT: unknown	AMOUNT: unknown	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS, sulfuric	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	X (6) OTHER (specify): steel wool, ceramic packing material, diatomaceous earth containing VO_5	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			X (10) METALS		
			X (11) OTHER (specify): VO_5 catalyst		

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

Inorganic chemicals including vanadium, heavy metals, sulfuric acid and acid salts.

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4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			via surface runoff
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL	X			buried wastes
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

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VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- [X] 1. NPDES PERMIT
- [ ] 2. SPCC PLAN
- [ ] 3. STATE PERMIT *(specify)*: NPDES # VA0002399
- [ ] 4. AIR PERMITS
- [ ] 5. LOCAL PERMIT
- [ ] 6. RCRA TRANSPORTER
- [ ] 7. RCRA STORER
- [ ] 8. RCRA TREATER
- [ ] 9. RCRA DISPOSER
- [ ] 10. OTHER *(specify)*:

B. IN COMPLIANCE?

- [X] 1. YES
- [ ] 2. NO
- [ ] 3. UNKNOWN

4. WITH RESPECT TO *(list regulation name & number)*: NPDES specifications

VIII. PAST REGULATORY ACTIONS

- [X] A. NONE
- [ ] B. YES *(summarize below)*

IX. INSPECTION ACTIVITY *(past or on-going)*

- [ ] A. NONE
- [X] B. YES *(complete items 1,2,3, & 4 below)*

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION *(mo., day, & yr.)*	3. PERFORMED BY: *(EPA/State)*	4. DESCRIPTION
suprise inspections	periodic	state	Water Control Board checks effluent for compliance by NPDES permit.
sampling	9/82	EPA/state	Soil samples taken (see Appendix C, 1.1)

X. REMEDIAL ACTIVITY *(past or on-going)*

- [X] A. NONE
- [ ] B. YES *(complete items 1, 2, 3, & 4 below)*

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION *(mo., day, & yr.)*	3. PERFORMED BY: *(EPA/State)*	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment *(Section II)* information on the first page of this form.

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APPENDIX A

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1. COST CENTER:	REM/FIT ZONE CONTRACT TECHNICAL DIRECTIVE DOCUMENT (TDD)	2. NO.:
ACCOUNT NO.:		F3-8312-16

3. PRIORITY:	4. ESTIMATE OF TECHNICAL HOURS:	5. EPA SITE ID:	6. COMPLETION DATE:	7. REFERENCE INFO.:
☐ HIGH ☒ MEDIUM ☐ LOW	60	VA-34	4/01/84	☐ YES ☐ NO ☐ ATTACHED ☐ PICK UP
	4A. ESTIMATE OF SUBCONTRACT COST:	5A. EPA SITE NAME: Allied Chem. Corp. Front Royal, VA		

8. GENERAL TASK DESCRIPTION: Conduct a Preliminary Assessment.

9. SPECIFIC ELEMENTS:

1.) Obtain from state or local authorities relevant information pertaining to hazardous substances or materials.

2.) Conduct a brief on and off site inspection.

3.) Prepare report including proposed sampling plan if applicable.

4.) contact Darius Ostrauskas prior to PA.

10. INTERIM DEADLINES:

11. DESIRED REPORT FORM: FORMAL REPORT ☒ LETTER REPORT ☐ FORMAL BRIEFING ☐

OTHER (SPECIFY):

12. COMMENTS:

13. AUTHORIZING RPO (b) (4) [redacted]
(SIGNATURE)

14. DATE: 1/17/84

15. RECEIVED BY: ☒ ACCEPTED ☐ ACCEPTED WITH EXCEPTIONS ☐ REJECTED
(b) (4) [redacted]
(CONTRACTOR RPM SIGNATURE)

16. DATE: 1/23/84

Sheet 1 White – FITL Copy
Sheet 2 Canary – DPO Copy
Sheet 3 Pink – Contracting Officer's Copy (Washington, D. C.)
Sheet 4 Goldenrod – Project Officer's Copy (Washington, D. C.)

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APPENDIX B

ORIGINAL
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USGS FRONT ROYAL, VA. QUAD. SCALE 1:24000

SITE LOCATION MAP

ALLIED'S FRONT ROYAL WORKS, FRONT ROYAL, VA.

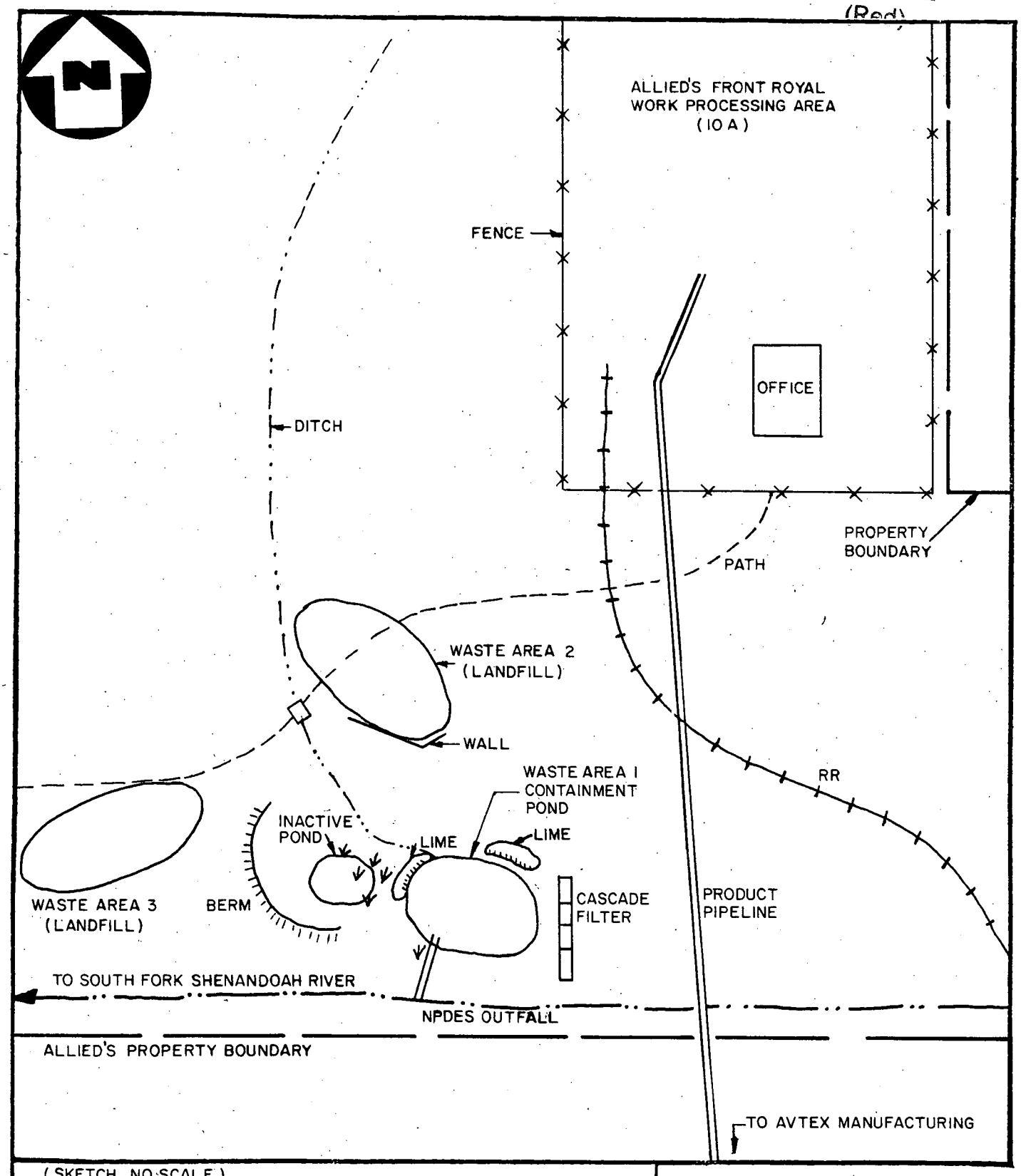
F3-8312-16 VA-34

FIGURE 1

NUS CORPORATION

A Halliburton Company

ORIGINAL
(Red)



(SKETCH - NO SCALE)

FIGURE 2

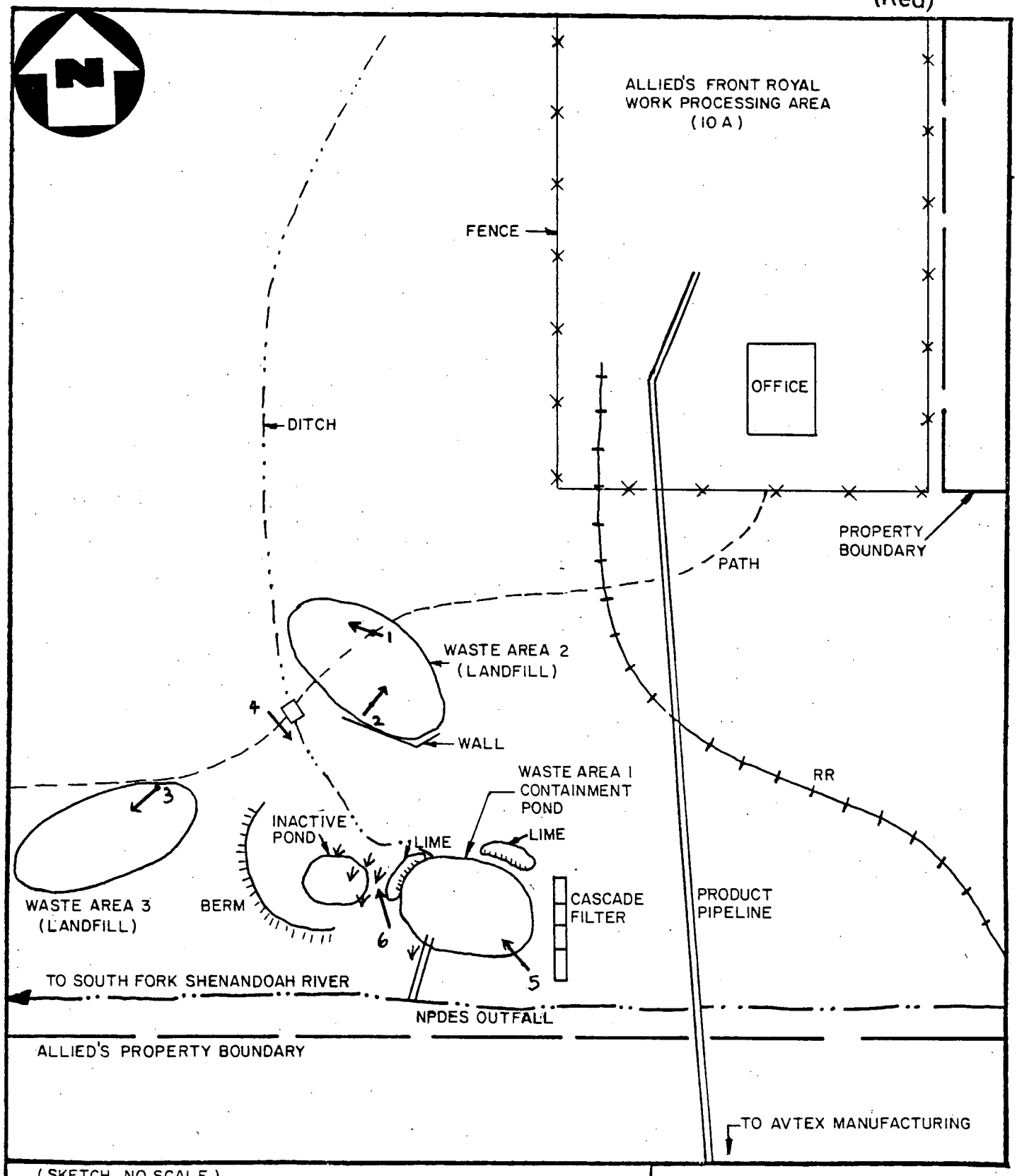
SITE SKETCH

ALLIED'S FRONT ROYAL WORKS, FRONT ROYAL, VA.

F3-8312-16 VA 34

NUS CORPORATION
A Halliburton Company

ORIGINAL
(Red)



(SKETCH - NO SCALE)

FIGURE 3

PHOTO LOCATION MAP

ALLIED'S FRONT ROYAL WORKS, FRONT ROYAL, VA.

F3-8312-16 VA 34

NUS CORPORATION

A Halliburton Company

ORIGINAL
(Red)

APPENDIX C - 1.1

ORIGINAL
(Red)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III
Western Regional Laboratory & Environmental Center
303 Methodist Bldg., 11th & Chapline Streets
Wheeling, West Virginia 26003

December 5, 1983

Robert Ford, Plant Manager
Daniel J. Sullivan, Supervisor-Environmental
P. O. Box 883
Front Royal, Virginia 22630

Dear Mr. Ford (Sullivan):

It has been over a year since we visited your facility at Front Royal, Va. your cooperation and assistance in our effort to evaluate any current pollution problems from past disposal practices at your plant were greatly appreciated.

We have attached a copy of the laboratory results from the samples we collected and split with you.

I regret that we were not able to complete our report on the survey and want you to know that our file for the site is being transferred to our Regional Office, where a contractor is to be assigned to prepare a report.

I hope this laboratory data will be of use to you in your effort to monitor this environment at your plant.

Sincerely yours,

Gary V. Bryant
Chief, Wheeling Field Section

Attachement: Laboratory Results

Allied
Sample Results

ORIGINAL
(Red)

Sample Description

Metals	14	Superfund Waste Sites, Blank
	15	Allied Chemical Fort Royal Works, WFO# 8209164121, Background Sample
Extractable	11	Allied Chemical Fort Royal Works, WFO# 8209164120, Disposal Site
	15	Allied Chemical Fort Royal Works, WFO# 820916421, Background Sample
	20	Method Blank for Soil

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401

301-224-2740
FTS-922-3752

ORIGINAL
(Red)

DATE : November 29, 1982

SUBJECT: Metals Results of Samples Obtained From Wheeling Site Inspections (Stauffer Chemical, Banger Farm, Trench Farm, Allied Chemical)-820922-08,09,10,11,12,15,17 (Superfund)

FROM : [redacted]
Physical Science Technician

[redacted] [redacted]
Chemist

ERT for BAS

TO :

Daniel K. Donnelly
Chief, Lab Section

THRU : E[redacted] ERT
Team Leader, Inorganic Analysis Unit

Samples 820922-08, 09, 10, 11, 12, 15, and 17 were analyzed by flame, flameless, and cold vapor atomic absorption spectroscopy after extraction following the extraction procedure detailed on pages 33127-33131 of the Monday, May 19, 1980 Federal Register (Vol. 45, No. 98).

Analytical results are presented in the attached table.

Additional quality control data is available upon request.

PFS:BAS:jr

cc: [redacted]

U.S. Environmental Protection Agency, Contract Regional Laboratory

Project Name: Wheeling Site Inspections (Superfund)

Sample Number: 820922-11

METALS

Parameter		Maximum Concentration	
Arsenic	ug/L	5000	5.6±.27(100%)
Cadmium	ug/L	1000	16±3.9
Chromium	ug/L	5000	194±0(104%)
Lead	ug/L	5000	402±36(100%)
Mercury	ug/L	200	< 0.2 (83%)
Nickel	ug/L		201 (105%)
Selenium	ug/L	1000	< 4.0*(MSA)
Silver	ug/L	5000	< 20
Barium	ug/L	100,000	< 100

*Analyzed in duplicate, both values below the specified detection limit.
**MSA = Method of Standard Additions.

ORIGINAL (Red)

Project Name: Wheeling Site Inspections (Superfund)

Sample Number: 820922-15

METALS

Parameter		Maximum Concentration	
Arsenic	ug/L	5000	< 2.0
Cadmium	ug/L	1000	< 10
Chromium	ug/L	5000	< 50
Lead	ug/L	5000	< 100
Mercury	ug/L	200	< 0.2
Nickel	ug/L		< 50
Selenium	ug/L	1000	< 2.0
Silver	ug/L	5000	< 20
Barium	ug/L	100,000	< 100

*Analyzed in duplicate, both values below the specified detection limit.
**MSA = Method of Standard Additions.

ORIGINAL (Red)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301-224-2740
FTS-922-3752

ORIGINAL
(Red)

DATE : November 23, 1982

SUBJECT: Extractable Analyse by GC/MS - Wheeling Site Inspections (Waynesboro, Stauffer Chemical, Banger Farm, Trench Farm, Allied Chemical)
Superfund - 820922-01 - 15; 17; 20

FROM : John Austin
Chemist

Joseph L. Slayton
Chemist

TO : Daniel K. Donnelly
Chief, Lab Section

Samples were examined for the presence of organic compounds listed as "Base/Neutral" and "Acid" extractable priority pollutants using fused silica capillary column/gas chromatography/mass spectrometry. Concentrations of these compounds were determined using the relative response of authentic standards to the internal standard.

The samples were also examined for the presence of compounds in addition to those on the priority pollutant list. Tentative identification of these compounds was made on the comparison of sample spectra to the EPA/NIH Mass Spectral Library. Concentrations for these compounds were estimated based on the response of the internal standard.

Detection limits are 1 ppb for liquids and .33 ppm for soils, with the exception of sample 820922-06 base extract and sample 820922-11 soil extract which were diluted ten fold prior to analysis.

JA/JLS:ad

cc: P. J. Krantz
QAO

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspections

Sample Number: 820922-11

mg/kg(wet wt)

BASE/NEUTRAL EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number	
Benzo(a)Anthracene	56-55-3	Trace <3.3 (2.6)
Chrysene	218-01-9	4.6
Fluoranthene	206-44-0	11.2
Phenanthrene	85-01-8	7.6
Pyrene	129-00-0	9.4

ORIGINAL
(Red)

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspections

Sample Number: 820922-20

BASE/NEUTRAL EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number	
Di-n-Butylphthalate	84-74-2	.91

ORIGINAL (Red)

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspections

Sample Number: 820922-11

ACID EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number
No Compounds Detected	

ORIGINAL (Red)

Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspections

Sample Number: 820922-20

ACID EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number
No Compounds Detected	

ORIGINAL
(R

Project Name: Wheeling Site Inspections

Sample Number: 820922-15

BASE/NEUTRAL EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number
Di-n-Butylphthalate	84-74-2

ORIGINAL (Red)

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspections

Sample Number: 820922-15

ACID EXTRACTABLE PRIORITY POLLUTANT COMPOUNDS

Parameter	Cas Number
No Compounds Detected	

ORIGINAL
(Red)

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspection

OTHER COMPOUNDS

Sample Number: 820922-11

Scan #	Tentative Identification	Estimated Conc. mg/kg (wet)
2008	Sulfur, Mol. (S8)	10000

Sample Number: 820922-15

Scan #	Tentative Identification	Estimated Conc. mg/kg (wet)
3050	Unknown With Base Peak 57 m/e	.80

ORIGINAL
(Red)

U.S. Environmental Protection Agency, Central Regional Laboratory

Project Name: Wheeling Site Inspection

OTHER COMPOUNDS

Sample Number:		820922-20
Scan #	Tentative Identification	Estimated Conc. ug/L
952	Unknown With Base Peak 57 m/e	7.6

ORIGINAL (Red)

APPENDIX C - 1.2

EPA

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

VAD003064003

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all Items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

I. EPA I.D. NUMBER / FACILITY NAME / FACILITY MAILING ADDRESS / FACILITY LOCATION

VAD003064003

ALLIED CHEMICAL CORPORATION

P. O. Box 883

Front Royal, Va. 22630

PLEASE PLACE LABEL IN THIS SPACE

Kendrick Lane

Front Royal, Va. 22630

ORIGINAL (Red)

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		X
C. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
D. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
E. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
H. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: ALLIED CHEMICAL CORP - FRONT ROYAL WORKS

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)

2 FORD ROBERT MANAGER

B. PHONE (area code & no.): 703 635 3121

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P O BOX 883

B. CITY OR TOWN

4 FRONT ROYAL

C. STATE: VA

D. ZIP CODE: 22630

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 KENDRICK LANE

B. COUNTY NAME

WARREN

C. CITY OR TOWN

6 FRONT ROYAL

D. STATE: VA

E. ZIP CODE: 22630

F. COUNTY CODE (if known)

CONTINUE ON REVE

ORIGINAL (Red)

ATTACHMENT
SUPPLEMENTAL INFORMATION
FORM 2C, ITEM V D
Section 311,Exclusion 2

ALLIED CHEMICAL CORPORATION, INC.
CHEMICALS COMPANY
P. O. Box 883
Front Royal, VA 22630

EPA I.D. No. VAD 003064003

A. The Plant handles materials which have been or may in the future be classified as toxic or hazardous substances under the Federal Water Pollution Control Act. Materials used include sodium chloride, sodium carbonate, limestone, sulfur, vanadium pentoxide, caustic soda, fuel oil, and gasoline. While not detected, other than as noted in Items V.A-E, the potential exists for these materials to appear in our effluent as a result of events beyond our control.

B. The Front Royal Plant of Allied Chemical Corporation is situated on land which has been utilized for industrial purposes for over 35 years. Our Outfall 001 also receives stormwater runoff and it is possible that trace concentrations of past products, supplies and raw materials could find their way into surface runoff and be detected by extremely sensitive analytical techniques, although the results of analyses included in this permit application do not suggest their presence.

C. Section 311 - Exclusion 2 Request

Pursuant to 40 CFR 117.12(a)(2), Allied Chemical Corporation reports the following information related to potential spills of materials covered under Section 311 of the Federal Water Pollution Control Act of 1977.

Spills of up to several thousand gallons of hazardous materials such as sulfuric acid or caustic could occur during normal operations or transfer due to malfunction or failure of equipment (such as tankcar valves, pumps, storage vessels, hosing, etc.) On detection, either visually or by routine pH monitoring, personnel would locate the source. The bulk of any such spills would then be contained either at the site of the incident or by diversion of waterflow to the containment pond to prevent further discharge via the outfall, and treated (neutralized, absorbed, etc.). However, it could become necessary for safety reasons to complete the clean-up operation by flushing the area with water. The topography of the plant is such that such contaminated water would be directed to the on-site treatment facility (pond) where neutralization would be completed to meet our NPDES permit limits before any water was discharged. Fuel oil or gasoline would be contained within the plant, first at the site of the spill and, if necessary, in the pond, and would be removed and disposed of off-site in approved facilities.

I. Executive Summary

The Front Royal Works of Allied Chemical Company manufactures sulfuric acid from elemental sulfur by the contact process. The Works discharges approximately 27 gpm of non-contact cooling water to an unnamed tributary to the South Fork of the Shenandoah River pursuant to NPDES Permit VA0002399. The pH of the discharge is continuously monitored with any effluent outside of the permitted pH range being diverted to a containment pond where it is neutralized before discharge.

As indicated by Federal EPA and confirmed by analysis at the Works, contact sulfuric acid plants in general and the Front Royal Works in particular are not sources of toxic pollutants. It is felt that any toxic effect that might be associated with the discharge from the Front Royal Works would be caused by low pH and that additional priority pollutant analyses or biomonitoring techniques would provide no more useful information than the continuous pH monitoring system already in place. It is proposed, therefore, that the Toxic Monitoring Program at the Front Royal Works consist of the continuous monitoring and recording of pH and the temperature control already specified in the existing NPDES permit.

II. Plant Production and Waste Treatment Facilities

The Front Royal Works of Allied Chemical Company is a contact sulfuric acid manufacturing facility composed of two identical production trains. The sole raw material, molten sulfur, is

(Red)

sprayed into a burner system where it is combusted with air to create SO_2. The hot SO_2 - laden gas stream is then cooled and passed through catalytic converters where the SO_2 reacts with air to produce SO_3. The SO_3 is absorbed into sulfuric acid in a series of towers. Product grade sulfuric acid is removed from the re-circulating absorption solution as a bleed stream. The majority of the product H_2SO_4 is shipped to a neighboring industrial facility.

The production process is continuous, 24 hours per day, 7 days per week. Start-ups and shut-downs are kept to a minimum, occurring only for periodic, scheduled and unscheduled maintenance.

The only process water discharged from this facility consists of a purge stream of approximately 27 gallons per minute from the cooling tower of a non-contact cooling water system. The stream flows through a cascade limestone filter for pH control before being discharged to an unnamed tributary to the South Fork of the Shenandoah River. This discharge is regulated according to NPDES Permit Number VA0002399 which was recently reissued by the Water Control Board.

The pH of the discharge is continuously monitored and a remote control valve diverts the effluent to a containment pond in the event that the pH is outside the permitted range. The contents of the containment pond are neutralized on a batch basis to be within the permitted pH range of 6-9 prior to discharge.

Low pH discharges are caused by occasional acid leaks into the non-contact cooling water system, minor spills in the processing area, and other sources of "fugitive" acid. These discharges are not related to start-ups or shut-downs of the manufacturing process but are infrequent, random occurrences generally treated by the acid neutralization and diversion system.

ORIGINAL (Red)

III. Toxicity Monitoring Program

Contact sulfuric acid plants, particularly those using sulfur as the sole raw material, are not sources of toxic pollutants. This fact was recognized by Federal EPA during the development of BAT guidelines for the sulfuric acid manufacturing industry. All efforts to develop BPT, BAT, NSPS, and Pretreatment regulations for the production of sulfuric acid from elemental sulfur by the contact process were terminated because ".... the small quantities of toxic pollutants found during screening are far below accepted treatability levels." (See excerpt from Development Document in Attachment 1.) Furthermore, the development of BAT limits for sulfuric acid manufacture pursuant to the NRDC Consent Agreement was also discontinued under Paragraph 8(a)(iv) of the agreement because there was insufficient toxicity in the effluent to justify the development of national standards (45 FR, No. 144, July 24, 1980, pg. 49470; Attachment 2.)

This judgement was confirmed with regard to the Front Royal Works by the priority pollutant analysis performed in conjunction with the NPDES permit renewal application submitted to the Water Control Board in October, 1980. (See Attachment 3.) That analysis indicated that, with the exception of certain metals which were also found in the intake water, no priority pollutants were detected in the effluent from the Works.

It is apparent therefore, that any toxicity that might be associated with the discharge from this plant would have to be the result of a low pH caused by a spill or other unusual event. These occurrences are adequately monitored and controlled by the existing continuous pH monitor and diversion valve system.

ORIGINAL (Red)

The effluent limitations proposed for the discharge are based on BEJ due to the following reasons:

1. The discharge from the facility is noncontact cooling water and of very high quality. The review of analytical data of both the intake and effluent at the facility indicates that the proposed parameters and limits are sufficient to monitor the discharge and to protect the integrity of State waters. They are believed reasonable for the flow and nature of the discharge characterized in the application.

2. Proposed regulations in the Federal Register (under 40 CFR Part 415, Vol. 45, No. 144, and dated 24 July 1980) has indicated that the amount and toxicity of each pollutant observed in samples collected from plants under the Sulfuric Acid subcategory (Subpart U) does not justify developing national regulations. No effluent guidelines exist for the industry subcategory.

Temperature

DMR's for the past year indicates the maximum temperature of the discharge has reached 90°F, the expired permits maximum limit, during three months of the past twelve. Stream monitoring indicates the maximum temperature reached in the unnamed tributary receiving the discharge this past year was 86°F. The increase of the temperature limit to 33°C (91.4°F) is believed reasonable in light of the facility performance and since no adverse impact will be experienced by the ultimate receiving stream. The South Fork Shenandoah River (1500 ft. from the discharge).

pH

Rationale below has been taken from a company letter dated 8 March 1979. "The facility discharge normally averages in the 7.1 - 7.4 pH range, the monitor alarm system must be set practically at the lower limit of 6.5. As a result of this narrow gap between the normal operating range and the lower limit, even the slightest upset puts the facility in danger of a permit violation, due to the lack of adequate response time. The Company has been able to control this situation, but the expenditure of manpower is considerable.

In summary, the company request is based upon the following:

1. "The reduced limit of 6.0 pH would significantly increase the time available to respond to problems with correspondingly reduced liklihood of excursions."

2. "The impact of the discharge, normally 15 - 25 gpm, is small on the receiving stream and virtually nonexistent on the ultimate receptor, which is the South branch of the Shenandoah River."

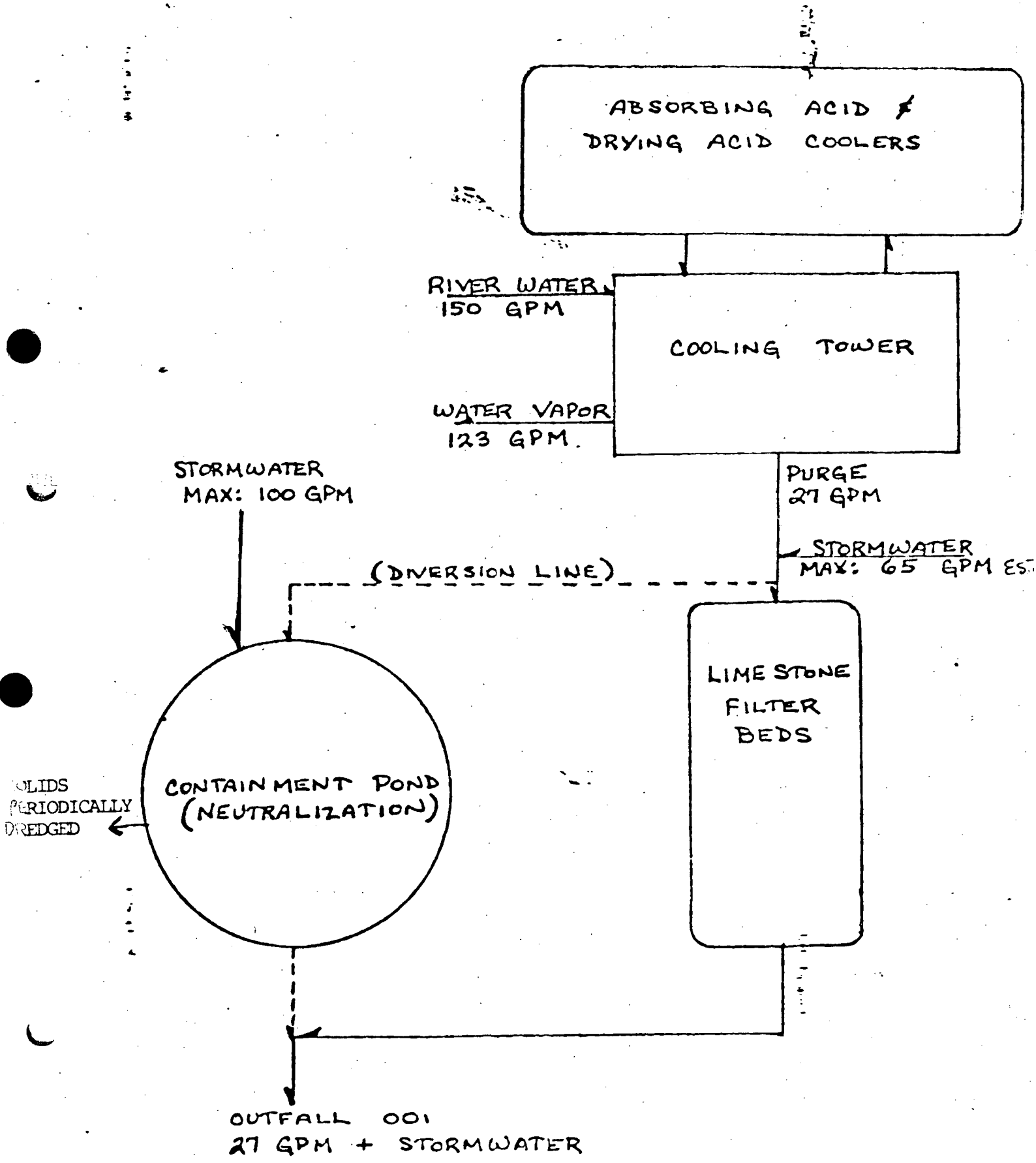
3. "Expenditures in terms of manpower could be reduced."

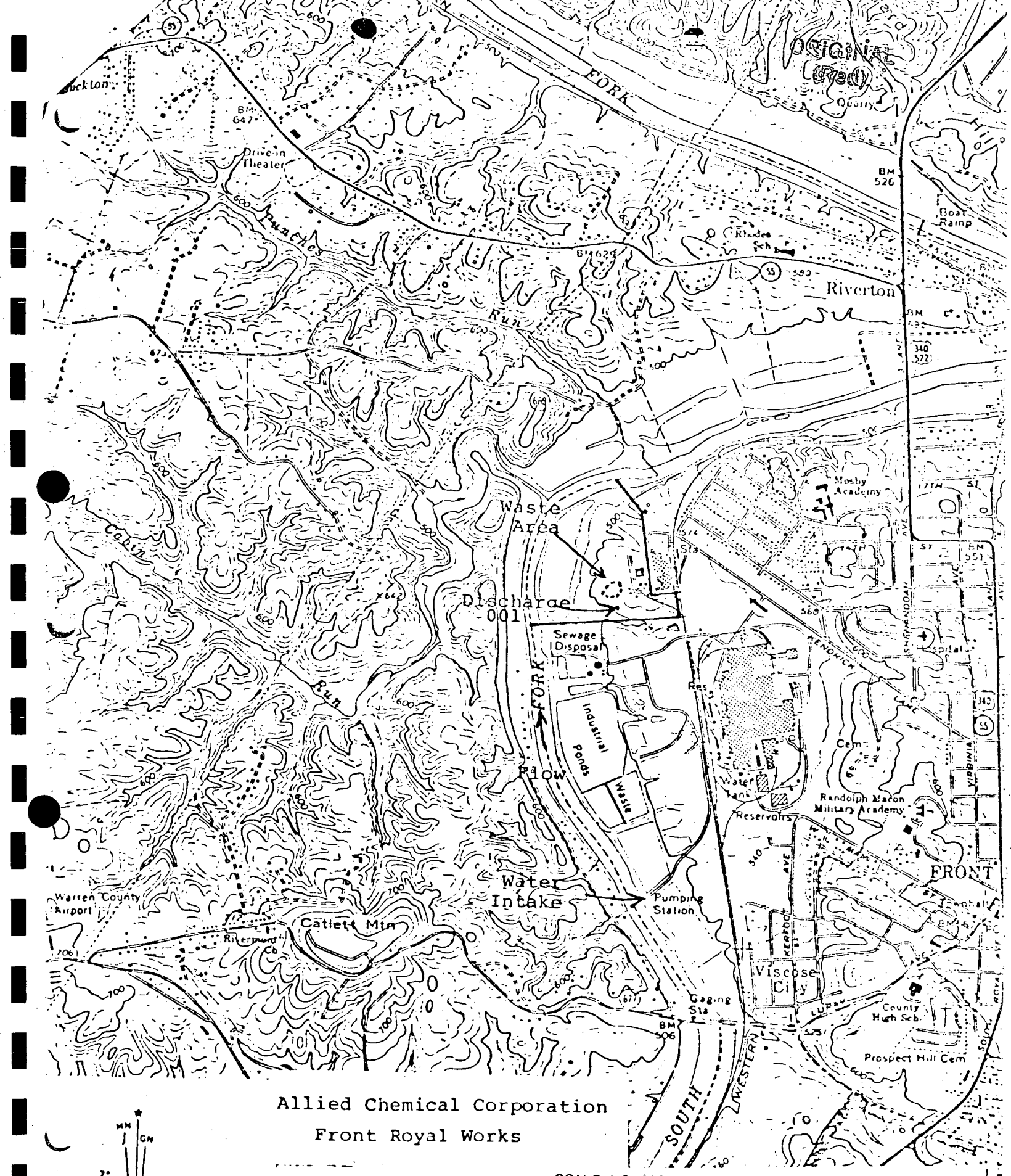
The staff concurs with the position taken by the Company and believes the limits 6.0 - 9.5 are reasonable for the nature and flow of the discharge. Past stream monitoring in the unnamed tributary indicates the inclusion of the lower pH limits of 6.0 will not violate Water Quality Standards.

ALLIED CHEMICAL CORP. - FRONT ROYAL WORKS

FRONT ROYAL, VIRGINIA

ORIGINAL
(Red)





Allied Chemical Corporation

Front Royal Works

MN GN

7° 124 MILS 1°48' 31 MILS

M GRID AND 1978 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to test, mark column 2-a *(secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table *(all seven pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS
METALS, CYANIDE, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-0)	X			<.01	<.004					1	mg/l	lbs.	<.01	<.02
2M. Arsenic, Total (7440-38-2)	X			<.005	<.002					1	"	"	<.005	<.009
3M. Beryllium, Total, 7440-41-7)	X			<.005	<.002					1	"	"	<.005	<.009
4M. Cadmium, Total (7440-43-9)	X			<.001	<.0004					1	"	"	<.001	<.002
5M. Chromium, Total (7440-47-3)	X			.004	.001					1	"	"	.003	.005
6M. Copper, Total (7550-50-8)	X			.014	.009					1	"	"	.008	.014
7M. Lead, Total (7439-97-6)	X			<.01	<.004					1	"	"	<.01	<.02
8M. Mercury, Total (7439-97-6)	X			<.0008	<.0003					1	"	"	<.0008	<.001
9M. Nickel, Total (7440-02-0)	X			0.515	.185					1	"	"	0.455	.819
10M. Selenium, Total (7782-49-2)	X			<.005	<.002					1	"	"	<.005	<.009
11M. Silver, Total (7440-22-4)	X			.007	.002					1	"	"	.006	.011
12M. Thallium, Total (7440-28-0)	X			<.005	<.002					1	"	"	<.005	<.009
13M. Zinc, Total (7440-66-6)	X			.089	.032					1	"	"	.007	.013
14M. Cyanide, Total (57-12-5)	X			<.02	<.007					1	"	"	<.02	<.036
15M. Phenols, Total	X			<.005	<.002					1	"	"	<.005	<.009
DIOXIN														
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS										

ORIGINAL (PAGE)

CONTINUE ON REVERSE

AND CAS NUMBER (if available)	a. GRAB	b. 24-HOUR COMPOSITE	c. 48-HOUR COMPOSITE	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	g. (1) CONCENTRATION	g. (2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X			N.D (1)						1	PPB		N.D (1)		1
2V. Acrylonitrile (107-13-1)	X			" (1)						1	"		" (1)		1
3V. Benzene (71-43-2)	X			"						1	"		"		1
4V. Bis (Chloromethyl) Ether (542-88-1)	X			"						1	"		"		1
5V. Bromoform (75-25-2)	X			"						1	"		"		1
6V. Carbon Tetrachloride (56-23-5)	X			"						1	"		"		1
7V. Chlorobenzene (108-90-7)	X			"						1	"		"		1
8V. Chlorodibromomethane (124-48-1)	X			"						1	"		"		1
9V. Chloroethane (75-00-3)	X			"						1	"		"		1
10V. 2-Chloroethylvinyl Ether (110-75-8)	X			"						1	"		"		1
11V. Chloroform (67-66-3)	X			"						1	"		"		1
12V. Dichlorobromomethane (75-27-4)	X			"						1	"		"		1
13V. Dichlorodifluoromethane (75-71-8)	X			"						1	"		"		1
14V. 1,1-Dichloroethane (75-34-3)	X			"						1	"		"		1
15V. 1,2-Dichloroethane (107-00-2)	X			"						1	"		"		1
16V. 1,1-Dichloroethylene (75-35-4)	X			"						1	"		"		1
17V. 1,2-Dichloropropane (78-87-5)	X			"						1	"		"		1
18V. 1,2-Dichloropropylene (542-75-6)	X			"						1	"		"		1
19V. Ethylbenzene (100-41-4)	X			"						1	"		"		1
20V. Methyl Bromide (74-83-9)	X			"						1	"		"		1
21V. Methyl	X			"						1	"		"		1

ORIGINAL (Red)

AND CAS NUMBER (if available)	a. Believed Present	b. Believed Absent	c. Analytical Data Available	a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	g. LONG TERM AVG. VALUE (1) Concentration	g. LONG TERM AVG. VALUE (2) Mass
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)														
22V. Methylene Chloride (75-09-2)	X			<10 (2)	<.003					1	PPB	lbs.	<10 (2)	<.018
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			N.D						1	"		N.D	
24V. Tetrachloroethylene (127-18-4)	X			"						1	"		"	
25V. Toluene (108-88-3)	X			"						1	"		"	
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			"						1	"		"	
27V. 1,1,1-Trichloroethane (71-55-6)	X			"						1	"		"	
28V. 1,1,2-Trichloroethane (79-00-5)	X			"						1	"		"	
29V. Trichloroethylene (79-01-6)	X			"						1	"		"	
30V. Trichlorofluoromethane (75-69-4)	X			"						1	"		"	
31V. Vinyl Chloride (75-01-4)	X			"						1	"		"	
GC/MS FRACTION – ACID COMPOUNDS (3)														
1A. 2-Chlorophenol (95-57-8)	X			N.D						1	PPB		N.D	
2A. 2,4-Dichlorophenol (120-83-2)	X			" (3)						1	"		"	
3A. 2,4-Dimethylphenol (105-67-9)	X			" (3)						1	"		"	
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			" (4)						1	"		" (4)	
5A. 2,4-Dinitrophenol (51-28-5)	X			" (4)						1	"		" (4)	
6A. 2-Nitrophenol (88-75-5)	X			" (3)						1	"		"	
7A. 4-Nitrophenol (100-02-7)	X			" (3)						1	"		"	
8A. P-Chloro-M-Cresol (59-50-7)	X			" (3)						1	"		"	
9A. Pentachlorophenol (87-86-5)	X			" (3)						1	"		"	
10A. Phenol (108-95-2)	X			" (3)						1	"		"	

ORIGINAL (Red)

NUMBER (if available)	MS	GC	HPLC	(a) CONCENTRATION	(b) MASS	(a) CONCENTRATION	(b) MASS	(a) CONCENTRATION	(b) MASS	ANALYSES	a. CONCENTRATION	b. MASS	AVERAGE VALUE (a) CONCENTRATION	AVERAGE VALUE (b) MASS	AN YS
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			N.D.						1	PPB		N.D.		1
2B. Acenaphthylene (208-96-8)	X			"						1	"		"		1
3B. Anthracene (120-12-7)	X			"						1	"		"		1
4B. Benzidine (92-87-5)	X			"						1	"		"		1
5B. Benzo (a) Anthracene (56-55-3)	X			"						1	"		"		1
6B. Benzo (a) Pyrene (50-32-8)	X			"						1	"		"		1
7B. 3,4-Benzo-fluoranthene (205-09-2)	X			"						1	"		"		1
8B. Benzo (ghi) Perylene (191-24-2)	X			"						1	"		"		1
9B. Benzo (k) Fluoranthene (207-08-9)	X			"						1	"		"		1
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)	X			"						1	"		"		1
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	X			"						1	"		"		1
12B. Bis (2-Chloro-isopropyl) Ether (39638-32-9)	X			"						1	"		"		1
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)	X			30 (5)						1	"	lbs.	30 (5)		1
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	X			N.D.						1	"		N.D.		1
15B. Butyl Benzyl Phthalate (85-68-7)	X			"						1	"		"		1
16B. 2-Chloro-naphthalene (91-58-7)	X			"						1	"		"		1
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	X			"						1	"		"		1
18B. Chrysene (218-01-9)	X			"						1	"		"		1
19B. Dibenzo (a,h) Anthracene (53-70-3)	X			"						1	"		"		1
20B. 1,2-Dichloro-benzene (95-50-1)	X			"						1	"		"		1
21B. 1,3-Dichloro-benzene (541-73-1)	X			"						1	"		"		1

ORIGINAL (Red)

1. POLLUTANT AND CAS NUMBER (if available)	MARK "X" a. Believed Present	b. Believed Absent	c. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)	X			N.D.						1	PPB		N.D.		1
23B. 3,3'-Dichlorobenzidine (91-94-1)	X			"						1	"		"		1
24B. Diethyl Phthalate (84-66-2)	X			"						1	"		"		1
25B. Dimethyl Phthalate (131-11-3)	X			"						1	"		"		1
26B. Di-N-Butyl Phthalate (84-74-2)	X			"						1	"		"		1
27B. 2,4-Dinitrotoluene (121-14-2)	X			"						1	"		"		1
28B. 2,6-Dinitrotoluene (606-20-2)	X			"						1	"		"		1
29B. Di-N Octyl Phthalate (117-84-0)	X			"						1	"		"		1
30B. 1,2 Diphenylhydrazine (as Azobenzene) (122-66-7)	X			"						1	"		"		1
31B. Fluoranthene (206-44-0)	X			"						1	"		"		1
32B. Fluorene (86-73-7)	X			"						1	"		"		1
33B. Hexachlorobenzene (118-71-1)	X			"						1	"		"		1
34B. Hexachlorobutadiene (87-68-3)	X			"						1	"		"		1
35B. Hexachlorocyclopentadiene (77-47-4)	X			"						1	"		"		1
36B. Hexachloroethane (67-72-1)	X			"						1	"		"		1
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X			"						1	"		"		1
38B. Isophorone (78-59-1)	X			"						1	"		"		1
39B. Naphthalene (91-20-3)	X			"						1	"		"		1
40B. Nitrobenzene (98-95-3)	X			"						1	"		"		1
41B. N-Nitrosodimethylamine	X			"						1	"		"		1

ORIGINAL

AND CAS NUMBER (If available)	a. Test product.	b. Believed present	c. Believed absent	3. EFFLUENT — 8. MAXIMUM DAILY VALUE (1) concentration	8. MAXIMUM DAILY VALUE (2) mass	b. MAXIMUM 30 DAY VALUE (if available) (1) concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) mass	c. LONG TERM AVRG. VALUE (if available) (1) concentration	c. LONG TERM AVRG. VALUE (if available) (2) mass	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	INTAKE (optional) LONG TERM AVRG. VALUE (1) concentration	INTAKE (optional) LONG TERM AVRG. VALUE (2) mass
GC/MS FRACTION — BASE/NEUTRAL COMPOUNDS (continued)														
43B. N Nitrosodiphenylamine (86-30-6)	X			N.D.						1	PPB		N.D.	
44B. Phenanthrene (85-01-8)	X			"						1	"		"	
46B. Pyrene (129-00-0)	X			"						1	"		"	
47B. 1,2,4-Trichlorobenzene (120-82-1)	X			"						1	"		"	
GC/MS FRACTION — PESTICIDES														
1P. Aldrin (309-00-2)			X											
2P. α-BHC (319-84-6)			X											
3P. β-BHC (319-85-7)			X											
4P. γ-BHC (58-89-9)			X											
5P. δ-BHC (319-86-8)			X											
6P. Chlordane (57-74-9)			X											
7P. 4,4'-DDT (50-29-3)			X											
8P. 4,4'-DDE (72-55-9)			X											
9P. 4,4'-DDD (72-54-8)			X											
10P. Dieldrin (60-57-1)			X											
11P. α-Endosulfan (115-29-7)			X											
12P. β-Endosulfan (115-29-7)			X											
13P. Endosulfan Sulfate (1031-07-8)			X											
14P. Endrin (72-20-8)			X											
15P. Endrin Aldehyde (7421-93-4)			X											
16P. Heptachlor (76-44-8)			X											

ORIGINAL (Red)

Form Approved OMB No. [illegible]

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

EPA Form 3510-2C (6-80)

ORIGINAL (Red)

ORIGINAL
(Red)

EXPLANATION OF FOOTNOTES AND DETECTION LIMITS

N.D. = Compounds were non-detectable at the 10 ppb level.

1. Compounds were non-detectable at the 100 ppb level.

2. The same level of methylene chloride ($<$10 ppb) was detected in the blanks.

3. Compounds were non-detectable at the 25 ppb level.

4. Compounds were non-detectable at the 500 ppb level.

5. Quantities detected were also found at the same level in the blanks and this compound is known to come from the flexible tubing in the samplers.

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

EPA

REGION: VA

SITE NUMBER (to be assigned by HQ): 34

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Front Royal Works

B. STREET (or other identifier): PO Box 883, Kendrick Lane

C. CITY: Front Royal

D. STATE: VA

E. ZIP CODE: 22630

F. COUNTY NAME: Warren Co.

G. OWNER/OPERATOR (*If known*)

1. NAME: Allied Chemical Corp.

2. TELEPHONE NUMBER:

ORIGINAL (Red)

H. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4 MUNICIPAL ☒ 5. PRIVATE ☐ 6 UNKNOWN

I. SITE DESCRIPTION

J. HOW IDENTIFIED (*i.e., citizen's complaints, OSHA citations, etc.*): E.C.

K. DATE IDENTIFIED (*mo., day, & yr.*):

L. PRINCIPAL STATE CONTACT

1. NAME: Walt Gulevich

2. TELEPHONE NUMBER: FTS 936-1754

II. PRELIMINARY ASSESSMENT (*complete this section last*)

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4 NONE ☒ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED (*no hazard*)

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☐ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☒ 4. SITE INSPECTION NEEDED (*low priority*)

C. PREPARER INFORMATION

1. NAME: (b) (4) [redacted]

2. TELEPHONE NUMBER: 804-786-1754

3. DATE (*mo., day, & yr.*): Jan 24, 1980

III. SITE INFORMATION

A. SITE STATUS

☒ 1. ACTIVE (*Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.*)

☐ 2. INACTIVE (*Those sites which no longer receive wastes.*)

☐ 3. OTHER (*specify*): (*Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.*)

B. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES (*specify generator's four-digit SIC Code*):

C. AREA OF SITE (*In acres*):

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE (*deg.-min.-sec.*): 38° 55' 53" ✓

2. LONGITUDE (*deg.-min.-sec.*): 78° 12' 59"

E. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO ☐ 2. YES (*specify*):

Continue On Reverse

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION	✓	1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION	✓	2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY	✓	4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND	✓	5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1 UNKNOWN ☐ 2. LIQUID ☐ 3. SOLID ☐ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☒ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5 HIGHLY VOLATILE

☒ 6. TOXIC ☐ 7 REACTIVE ☐ 8 INERT ☐ 9 FLAMMABLE

☐ 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
☐ (1) PAINT, PIGMENTS	☐ (1) OILY WASTES	☐ (1) HALOGENATED SOLVENTS	✓ (1) ACIDS	✓ (1) FLYASH	☐ (1) LABORATORY PHARMACEUT.
☐ (2) METALS SLUDGES	☐ (2) OTHER (specify):	☐ (2) NON-HALOGNTD. SOLVENTS	☐ (2) PICKLING LIQUORS	☐ (2) ASBESTOS	☐ (2) HOSPITAL
☐ (3) POTW		☐ (3) OTHER (specify):	☐ (3) CAUSTICS	☐ (3) MILLING/ MINE TAILINGS	☐ (3) RADIOACTIVE
☐ (4) ALUMINUM SLUDGE			☐ (4) PESTICIDES	☐ (4) FERROUS SMLTG. WASTES	☐ (4) MUNICIPAL
☐ (5) OTHER (specify):			☐ (5) DYES/INKS	☐ (5) NON-FERROUS SMLTG. WASTES	☐ (5) OTHER (specify):
			☐ (6) CYANIDE	✓ (6) OTHER (specify): catalysts salts	
			☐ (7) PHENOLS		
			☐ (8) HALOGENS		
			☐ (9) PCB		
			X (10) METALS		
			☐ (11) OTHER (specify)		

Continue On Page 3

V. WASTE RELATED INFORMATION *(continued)*

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE *(place in descending order of hazard).*

catalysts
unspecified salts

ORIGINAL
(Red)

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD *(mark 'X')*	C. ALLEGED INCIDENT *(mark 'X')*	D. DATE OF INCIDENT *(mo., day, yr.)*	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER *(specify)*: unknown	✓			

Continue On Reverse

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

ORIGINAL (Red)

☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☑ 3. STATE PERMIT (specify): none by SHD

☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER SWCB VPDES Va0002399

☐ 7. RCRA STORER ☐ 8 RCRA TREATER ☐ 9 RCRA DISPOSER

☐ 10. OTHER (specify): _____

B. IN COMPLIANCE?

☐ 1. YES ☑ 2. NO SHD permit ☑ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): _____

VIII. PAST REGULATORY ACTIONS

☐ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

☐ A. NONE by SHD ☑ B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2 DATE OF PAST ACTION (mo., day, & yr.)	3 PERFORMED BY: (EPA/State)	4. DESCRIPTION

X. REMEDIAL ACTIVITY (past or on-going)

☐ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.